

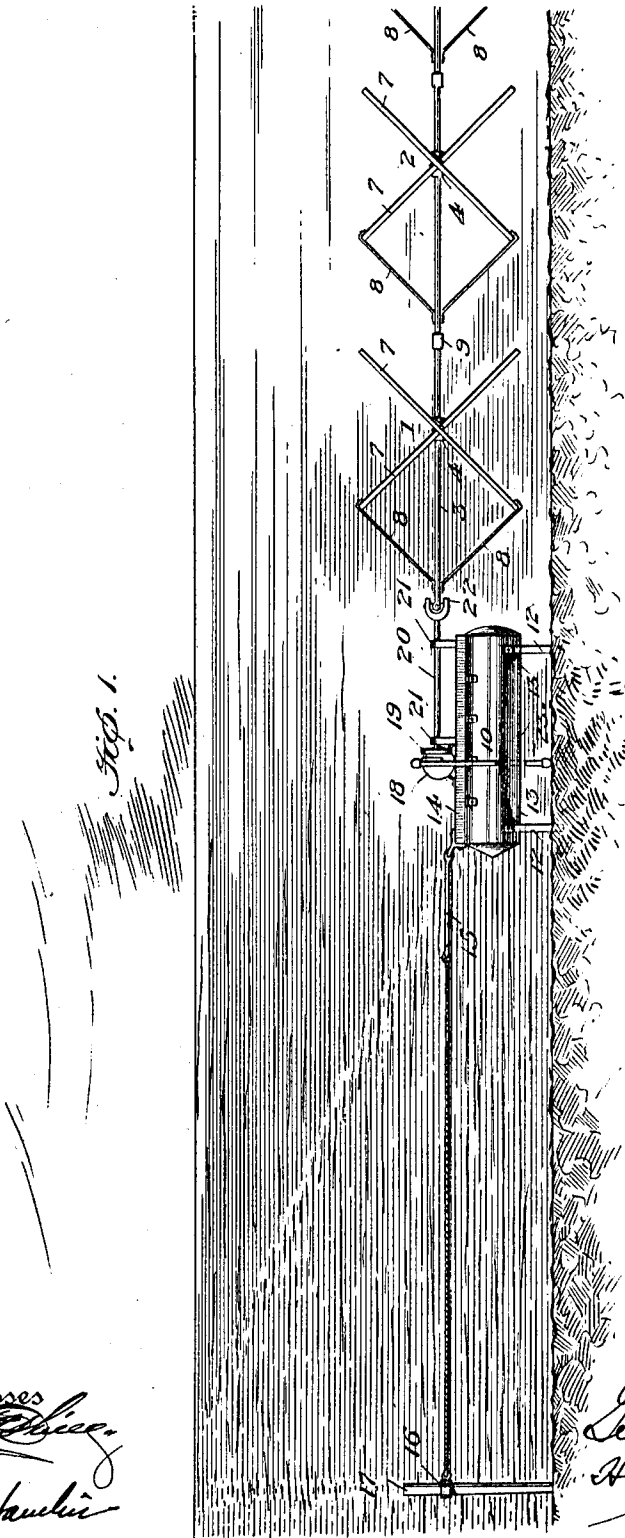
G. C. SUTTON,
CURRENT MOTOR.

APPLICATION FILED APR. 17, 1911.

1,012,291.

Patented Dec. 19, 1911.

2 SHEETS—SHEET 1.



Witnesses
[Signature]
[Signature]

Inventor
George C. Sutton
Henry W. Coff
his Attorney

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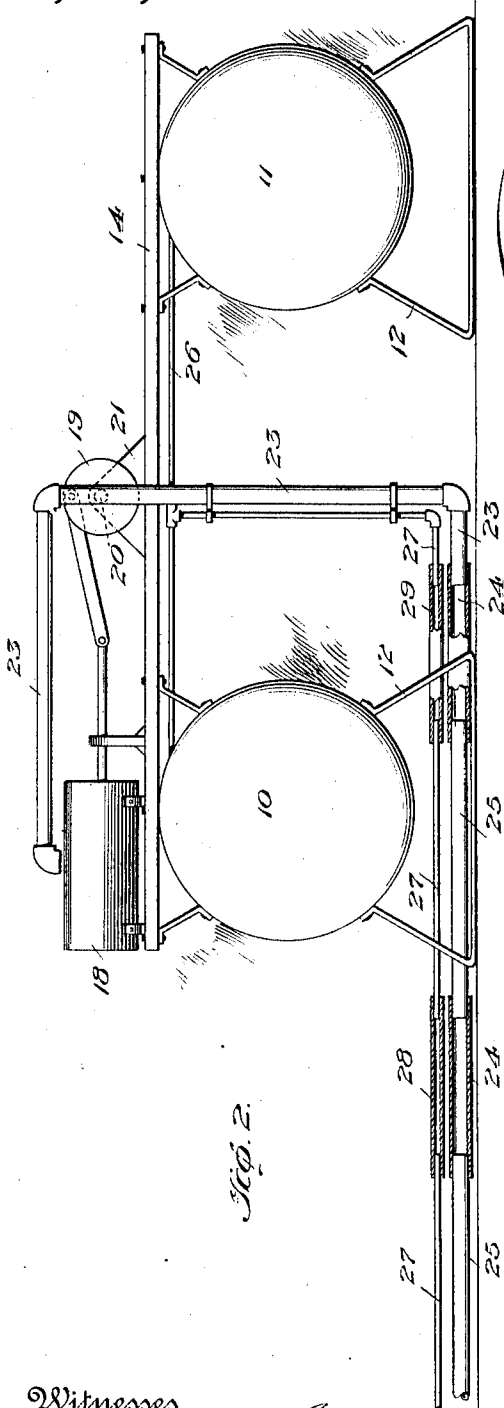


Fig. 2.

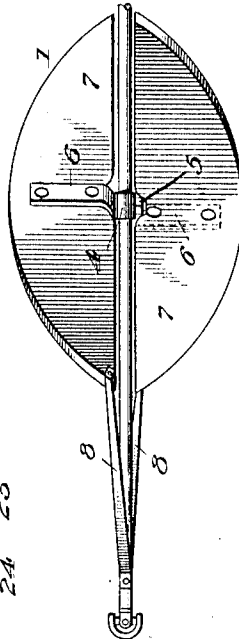
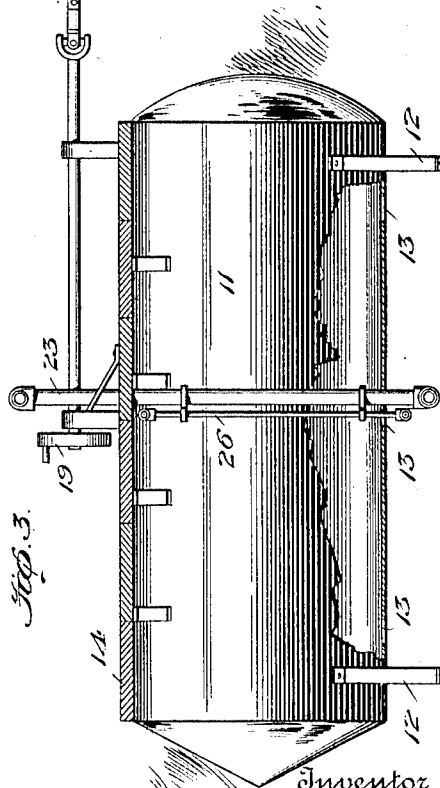


Fig. 3.



Witnesses

[Signature]
[Signature]

Inventor

Gorge C. Sutton
By *Henry W. Copp*
his Attorney

UNITED STATES PATENT OFFICE.

GEORGE C. SUTTON, OF PRIEST RIVER, IDAHO.

CURRENT-MOTOR.

1,012,291.

Specification of Letters Patent.

Patented Dec. 19, 1911.

Application filed April 17, 1911. Serial No. 621,635.

To all whom it may concern:

Be it known that I, GEORGE C. SUTTON, a citizen of the United States, residing at Priest River, county of Bonner, and State of Idaho, have invented certain new and useful Improvements in Current-Motors, of which the following is a specification.

This invention relates to current motors, particularly those designed for operating pumps.

The object of the present invention is the provision of a simple, strong, durable and light current motor which can be disposed at the bottom of a stream and will utilize the force of the flowing water for the purpose of transformation into power, more especially for the operation of a pump.

In carrying out the invention, I provide a current wheel of novel construction, formed of units which can be coupled together to any desired extent according to the power it is necessary to derive from the flowing water, said units being so constructed that they will be maintained in submerged and floating condition, extending down stream, their blades being of novel construction and disposition so that even if the stream is shallow, driftwood and debris cannot catch thereon and the full effect of the force of the water will be obtained.

The invention consists, further, in the provision of anchorage tanks, a pump, and pumping and air pipe lines, together with means for holding the tanks in position on the bed of the stream as will appear more fully hereinafter.

In the accompanying drawings: Figure 1 is a view taken longitudinally of a flowing stream, showing my invention in position for operation; Fig. 2, an end elevation of the anchorage tanks, pump, etc.; and Fig. 3, a view taken longitudinally of the apparatus through the platform connecting the tanks, certain parts being broken away.

The current motor is composed of attachable and disconnectible units 1, 2, etc., of which there may be as many as desired, according to the power it is desired to take from the flowing stream where the motor is to be used. These units each have a rod or pipe axis or stem 3 on which are collars 4 to which are fastened by bolts 5, the backs or ribs 6 in such manner that the latter can be readily adjusted and clamped so that the blades or paddles 7 will be set at right

angles to each other and their faces at approximately 45 degrees to the horizontal. The blades or paddles are retained in this position and are strengthened by braces 8, securing their tips to the stem 3. The stems 3, whether of rod or pipe, are connected together by coupling sleeves 9 until as many have been connected as are required to develop the requisite power. The metal and wooden parts of the units 1, 2, etc., are so proportioned that the specific gravity is somewhat less than that of the water and hence the entire string of units will be maintained in substantially horizontal position by the force of the current.

Anchorage tanks 10 and 11 which are provided with legs 12 to rest on the bed of the stream, afford means for holding the motor in position, that is, anchored. These tanks are of sheet metal, preferably conical at their up stream ends and convex at their down stream ends and they are provided in their bottom with openings 13 through which the water can enter to fill the tanks or be forced out to float them, as will presently appear. The two tanks are rigidly connected by a platform 14 and they are themselves permanently retained in position by branch cables or chains 15 and a common cable or chain 16 which is connected at 17 to a pile or any suitable permanent device in the stream. The length of the cable or chain 16 will be such that when the tanks are floated, they can swing to the shore. Mounted on the platform 14 is a pump 18 of any suitable type which, like the other parts of the motor, is entirely submerged and therefore never requires priming. The pump pitman and piston are operated from a crank wheel 19 which is on a shaft 20 mounted in suitable bearings 21 on the platform and extending up and down stream. A universal joint 22 of any preferred form connects the stem 3 to the shaft 20.

From the pump 18 there extends a metal pipe 23 which is provided with short flexible hose pipes 24 of suitable length, say a few feet, and in between these pieces of hose is the section of metal pipe 25. The lengths of these flexible and rigid pipe sections will depend upon the distance from the bottom to the surface of the stream, the purpose being to provide for flexibility when the entire apparatus is being raised or

lowered in the stream. When the apparatus is moved to the shore, these pipes are disconnected. Pipe 23, 24, 25, leads to the point on the shore where it is desired to deliver the water.

The tanks 10 and 11 are connected by an air pipe 26 which in turn is provided with rigid and flexible sections 27, 28, and 29, likewise leading to the shore at a suitable point as, for instance, to some air pump. The tanks 10 and 11 having been filled with air, the entire apparatus can be swung out into the stream and the air then allowed to escape from said tanks, whereupon the water will rise slowly through the openings 13 and the tanks, platform, pump, and current motor will sink to the bottom of the stream where they will remain, completely submerged, as long as it is desired to use the apparatus. The force of the flowing water will maintain the units 1, 2, etc., extending down stream and the joint will permit any flexing that is necessary during operation. The pump being submerged will continuously pump the water to the point to where it is intended to be used and the entire apparatus being disposed at the bottom of the stream, the latter will become shallow or freeze over without in any way affecting the operation. If it is desired to bring in the apparatus, air is pumped into the tanks 10 and 11 through the air pipe, thereby driving the water out through the openings 13, whereupon the entire apparatus

will rise to the surface and may be brought to shore.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. In a current motor, the combination with an anchorage vessel or tank having means for admission of air and water thereto, whereby it may be filled either with air or with water to cause it to float or to sink, of a water current-wheel, and a pump carried by the tank or vessel and operatively connected to the wheel.

2. In a current motor, the combination with a pair of tanks or vessels having means for the admission of air and water thereto, of a platform connecting said tanks, a pump disposed on said platform, a current wheel operatively connected to said pump, a pipe leading from the pump to any suitable point, and an air pipe leading from the tanks to any suitable point, the aforesaid devices being adapted to be completely submerged in a floating stream so that the flow of the stream will operate the current wheel and cause the water of the stream to be forced through the pipe thereof.

In testimony whereof, I hereunto affix my signature in presence of two witnesses.

GEORGE C. SUTTON.

Witnesses:

JAS. J. BRYANT,
J. D. McINTOSH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."